smart connection consulting

SMART GUIDE 2

MAINTAINING SYNTHETIC SPORTS SURFACES

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Smart Connection Consulting does not accept liability for the accuracy of the information provided. All material and information provided by third parties is done so in good faith to assist organisations in understanding the key issues around synthetic sports surfaces. We will continually update the Smart Guide to attempt to keep the industry updated.

Smart Connection Consulting is committed to sharing knowledge and learnings with the industry and has produced a comprehensive library of information available free of charge to the industry. These are identified in three levels.

- **The A-Z of Smart Synthetic Sports Surfaces** – An overview of everything you need to know from A-Z.
- **Smart Guides** – A detailed overview of key subjects that are currently raised, including
  1. Smart Guide to Football Turf
  2. Smart Guide to Maintaining Synthetic Sports Surfaces
  3. Smart Guide to Environmental Opportunities
  4. Smart Guide to Decision Making
  5. Smart Guide to Synthetic Performance Standards.
- **Smart Insights** – a brief overview of key subjects that are consistently raised by clients, partners and the community, these include:
  1. Climate Change and Sport
  2. Designing Synthetic Sports Fields for Biodiversity
  3. Maintaining Synthetic Sports Surfaces
  4. Environmental Impact Opportunities
  5. End of Life, Circular Economy and Asset Stewardship
  6. Synthetic Surfaces FAQ
  7. Microplastics and Synthetic Surfaces
  8. Urban Heat Island Impact
  9. Drainage for Synthetic Sports Fields
  10. Global Regulations for Synthetic Sports Turf
  11. Sports Surface Standards
  12. PFAS and Sports Surfaces
  13. Football Turf for Australian Football Codes

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1. Introduction to Sports Surfaces

1.1 Growing Population Impacting Surface Type

As the Australian populations continues to grow, building upon the 25% increase since 1997, we are experiencing growth in traditional sports such as all football codes, tennis, hockey and athletics. Interestingly, the growth in non-traditional provision through sports clubs, continues to grow, with local government, leisure centres and commercial options providing significant infrastructure to cope with the demand.

The various surfaces need to now be able to accommodate the significant intensity of usage, including acrylic hard surfaces, rubber and synthetic grasses (long and short-pile) to cope with the demand.

Photo 1: Football, AFL and Cricket - St Kevin's College, Vic (source: Tuff Group)

With alternative sports surfaces to natural grass being more popular in some environments it is critical that they are maintained in a manner that they are safe, usable and perform at the expected levels. These surfaces include:

- **Acrylic hard courts** – Tennis, Basketball, 3-on-3 volleyball, 5-a-side, netball and fitness.
- **Rubber surfaces** – Running tracks, fitness surfaces, athletic tracks.
- **Synthetic grass** – Tennis courts – Tennis, multi-sport, futsal/5-a-side.
- **Synthetic grass** – Short-pile – Hockey Surfaces, GEN2 multi-sport
- **Synthetic grass** – Long-pile – Football codes of Soccer, Australian Rules, Rugby Union & Rugby League.

Each surface type needs to be planned, designed, and procured to ensure the surface can achieve its life expectancy. This will be helped if the owners and users of the surface understand how each surface should be maintained, renovated and monetised to allow it to achieve it expected 'age'.

When organisations invest in synthetic sports surfaces, it is crucial that they invest in the Whole of Life (WOL) of the surface to maximise the possible increased patronage and life expectancy. This is achieved by having an appropriate maintenance strategy in place for the surfaces usage levels, which will maximise the Triple Bottom Line Return on Investment (RoI) for the sports surfaces.

Photo 2: Multi-sports facility Thomson Oval Willoughby City Council (source: Willoughby City Council)

This Guide aims to provide the reader generically with:

- An understanding of why maintenance is critical;
- The different variables and how they impact the type of maintenance;
- What maintenance should be considered;
- The latest trends and thinking on maintenance approaches;
- Maintenance for specific surfaces; and
- Examples of a maintenance manual.

It is anticipated that this Guide will assist any organisation in achieving its goal of encouraging more people to play more often on each surface due to effective maintenance. This document should be read with the manufacturer's Maintenance Manual and should not be used to replace it.

1.2 Why Maintain a Sports Surface

With the growth in inner urban towns and cities, the demand to participate in community sports continues to grow, placing pressure on natural grass sports fields. This pressure, combined with the environmental stress of climate change, with significantly more rain events and a higher frequency of droughts and hot weather days, has led many local governments, sports clubs, and educational establishments to invest in alternative sports surfaces to complement natural turf options.

Photo 3: Multi-sport Football / Cricket field at Chatswood High School. Source: Polytan.

It is critically important that the sports surface is designed, manufactured, installed and maintained in a manner that will

achieve its life expectancy and provide a safe and consistent playing surface. The life expectancy of the sports surface is dependent upon the type of surface (rubber, acrylic, grass), the intensity of usage (hours and number of users), the quality of the surface (is it Fit for Purpose) and the maintenance employed. The external factors will include weather (rain, U.V., wind etc), location, quality of the civil engineering works, equipment, and footwear used on the surface.

The benefits of a good maintenance program include:

- Ability to maintain certification of the International Sports Federation (I.F.)
- Compliance with manufacturing warranty,
- Consistent playability and performance,
- Increased probability of achieving life expectancy,
- Reduces risk of injuries and impact on players,
- Aesthetically optimised performance,
- Reduced the need for major renovations and ongoing infill top-ups, reducing overall costs.
- ENSURES MANUFACTURERS WARRANTIES ARE VALID.

With most International Federations' requirements, the installer/manufacturer must provide performance surface maintenance manuals for the surfaces to guide the owners on their roles and responsibilities for maintenance and upkeep.

1.3 Surface Maintenance Etiquette

There are common principles that should be followed regardless of the surface type to maximise life expectancy, ensure surface performance, and reduce risk to users.

i. Appropriate footwear

Good quality sports shoes and boots should be used that are designed specifically for the surface type.

- Running spikes for rubber tracks shouldn't be too long, as this will tear the rubber.
- Flat-soled shoes are not recommended for long-pile grass fields.
- High heeled shoes are not recommended as they can puncture the grass and scratch the other surfaces.
- Smooth soled shoes are not good for acrylic surfaces when wet or slippery.
- Appropriate studded or pimpled shoes for long and short pile grass.

The wrong footwear on some surfaces, apart from damaging the surface, could quickly invalidate the manufacturer's warranty. Do ensure that if flat soled shoes are going to be used on 'long-pile' grass that the manufacturer/installer is aware as they should guide you to an alternative solution. This could be a 'Tape Yarn' as opposed to a monofilament system.

It may be appropriate to have a mat at the exit point of a field or court that stimulates the sand, infill, rubber, etc., to leave the base of the shoes or boots.

ii. Overhanging trees

Trees can cause significant challenges to a surface, including:

- Tree roots aggressively undermining the surface flatness
- Leaves falling and causing increased maintenance to keep them clear of the court or to stop breakdown on a grass field.
- Dripping water off the trees, which could make the surface slippery
- Shade, which can encourage algae to grow
- Bird and bat dropping, which can cause damage, especially to acrylic surfaces
- Secretions of aphids can coat courts and fields, which may impair footholds.

So if trees are to be planted, mitigation strategies need to be considered, including root barriers and pruning regimes.

iii. Equipment and furniture

The surfaces are not designed to have equipment dragged across them, such as goal posts, which will damage the acrylic courts, short/long-pile grass, and rubber.

If the equipment is on wheels, they should be rubber type wheels.

Normal seats have a tendency to mark the courts, leave indents in rubber and can puncture grass fields.

Some hard surfaces can be designed for roller skating/blades and this needs to be explored with the installer/manufacturer to ensure the surface type will not be impacted.

iv. Harmful substances

The following substances should not be used around sports surfaces:

- Chewing gum – as when this hardens it is very difficult to remove.
- Cigarettes – likely to create a fire hazard and leave unsightly burn marks.
- Petrol/solvents—These will seriously damage most surfaces, and machines that use petrol/diesel need to ensure that there are no leaks. If they need to be filled up, this should be done off the court/field. If any is spilt, it is recommended to use copious amounts of water/detergent quickly to remove it.
- Salt/de-icing agents should not be used as they can be unpredictable and may leave a residue as they dry out, which may damage the surface or make it slippery for users.

v. Weeds

It is common to find weeds in long-pile grass fields where birds have dropped seeds, or they have been blown into the field or court and germinated. The extent to which the weeds are a nuisance is dependent upon the surface type, where you may see many weeds situated along the fence line or in areas that may not receive strong traffic from users, etc. The weeds should be treated on a frequency of growth, the more weeds, the greater the treatment. Use a suitable weed killer that doesn't cause problems to the surface type and won't leave a residue that could impact users, especially small children. Seek advice from the installer/manufacturer for approved solutions, which are also environmentally friendly.

1.4 Maintenance Strategy Specific to Site and Surface

Introduction

It is important that each site and surface within the site has its own maintenance strategy. As part of the strategy, there needs a number of aspects to be considered, including:

- Responsibilities of roles at the site between the sports club, Council/sport and any contractor or workforce.
- Equipment available, for each of the maintenance tasks, which may mean that specialist equipment is needed from external organisations.
- Surface type, will mean that each surface will be maintained differently, including, rubber, long and short-pile grass and acrylic surfaces.
- Age of surface.
- Frequency and intensity of use.
- Warranty requirements.

Roles and responsibilities

As there are many stakeholders involved in many of the sports facilities, it is imperative that each understands that they have a role to play in ensuring that the surfaces are maintained well. This may include:

- Asset Owner – Council or sports club, who mainly purchased the synthetic surface and has the overall responsibility in ensuring that the surface reaches its expected life expectancy, is safe for users and performs to the expected level. They should develop the maintenance specification to ensure that all stakeholders do their part.
- Sports club – normally, the users should check that the surface is clean and safe to use before they physically use the surface. They should be expected to leave it in the same standards after they finish, taking away any rubbish, replacing equipment and doing any operational tasks, such as drag mats over sandy tennis courts, refilling the penalty spot on a long-pile football field and brushing the sand back into the long jump pits from the track etc.
- Maintenance organisation – whether inhouse or contracted in, the maintenance for each surface should be clearly articulated with an agreed specification that will address routine, planned, reactive and scheduled maintenance renovations.
- Specialist maintenance – there may be times when specialist equipment and expertise is needed such as decompaction for long-pile turf, or high pressure water cleaner for tracks and this needs to be programmed in.

Equipment availability

It is critical that the right equipment is used for the appropriate tasks, and by the right skilled people.

Photo 4: Friction Sweepers

1. High wear area maintenance of 3G fields

For synthetic long pile surfaces, a bucket full of the agreed infill sand and performance infill is needed for the club to use around high wear areas such as the penalty spot, corner flags and coaches boxes.

- The plastic, wide angled rake should be softly used to bring the yarn upright.
- Slowly, by hand, spread the sand evenly and walk on it to compact the sand.
- Repeat this task until the sand is compacted and levelled with the rest of the infill levels. Add a small amount of performance infill on top.

2. Long-pile brushing of 3G fields

Brushing of the long-pile turf has a number of aims, including;

- To brush the flattened yarn back upright
- To remove vegetation from the top of the carpet
- To brush back any performance infill that has migrated across the field during play and therefore returning the overall field to the levels of free pile height that will protect its ageing process and performance characteristics.

With many different types of brushes on the market the key ones that perform different tasks include:

- Sweeping brush – to sweep field back to infill levels.

- Drag mat – to collect debris and is essential that this is not a hard abrasive mat. It is preferably not to be used as the field ages. A Friction Sweeper is a better option.
- Oscillation Brush Machine – These are hydraulically controlled, rotating forward and in reverse. These brushes are especially effective for raising the yarns in high wear areas.
- Decompaction Tines – used to decompact the performance infill, normally before and after the main season. As the field ages or the intensity of usage increases (e.g. small-sided games), the field will need decompacting. This should be completed slowly with a specification machine.

3. Maintenance of sand-filled tennis / sports courts

Most sand filled tennis and sports courts are filled within 5mm-10mm of the yarn height. As the court is played on, the silica sand acts both as a ballast and to protect the yarn from falling over as well as U.V. degeneration.

It is important that the sand is kept clear and even across the court for safety, performance and aesthetics.

Most tennis courts use a leaf blower as well as a yard brush to remove the leaves before they break down.

The Friction Sweeper can be used across a number of courts and/or brush to weed behind a small machine.

All of these approaches will reduce the sand movement and improve the performance of the surface.

Moss and algae can build up and can be seen at certain parts of the year, mainly in areas that have shade and are not frequently used - around fence lines etc. This can then become slippery and damaging to the court. This needs to be treated and a non-oil based product approved by the manufacturers should be sought.

If the courts haven't been used or maintained for a long period they may need some more remediation by a deep clean with options around pressure water, vacuum clean and replacement of some of the sand.

4. Maintenance of acrylic surfaces

It is important to keep the acrylic or hard court surfaces clean, free from dust, dirt, rubbish and any other detritus.

Depending upon usage and their location it may be beneficial for the surface to be pressure washed as part of regular cleaning. This can be completed by a specialist contractor who would be able to do this over a number of courts in a day.

5. Maintenance of rubber surfaces

Typically rubber athletics tracks should be brushed annually with a specialist brushing machine - especially around the long/triple jump pits.

In addition, the following should be considered:

- Deep pressure hose clean (every 1-2 years)
- Movement of the javelin throw area and high jump beds to reduce the damage of athletes using the same area each jump or throw.

Design to Reduce Intensity of Maintenance

By understanding how the Football Turf system works, the design can significantly reduce the level of maintenance needed and the frequency. The approach may include:

- Shockpad installation: By having a quality shockpad (warranty over 20 years and made to EN 15330-4:2022 the amount of infill needed has been reduced significantly. An infill level without a shockpad would typically be 25kg/m² sand and 20kg/m² rubber/organic. With a shockpad, it would be expected that the performance infill only needs to be 4-8kg/m².
- Yarn combination: By moving away from a monofilament yarn system to a tape or tape/monofilament dual yarn carpet, the infill splash is reduced significantly (estimated to be greater than 75%). This should reduce the frequency of the need to brush infill 'back into' the centre of the fields.
- Yarn and carpet structure: High quality thicker pile yarns are significantly more resistant to pile splitting and flattening. Carpets with higher stitch rates are more resistant to pile flattening, yarn splitting, and infill dispersion;
- Synthetic turf systems incorporating shockpads or elastic layers generally suffer less from infill compaction than systems without.
- Removal of spoon drains: Remove all surface drainage and design this to be subsurface under the carpet to ensure no infill migration into waterways.
- Microplastic migration mitigation: Adoption of Standards Australia / European Standards SA TR CEN 17519:2021. Surfaces for sports areas. Synthetic turf sports facilities, Guidance on minimising infill dispersion into the environment". This provides design advice on how to contain microplastics (including infill) within the field of play.
- Player and vehicle entry points: To reduce the migration of the infill and dirt brought onto the fields by boots, shoes, and vehicle tyres, have brush trays for pedestrians and vehicles.
- Facility Equipment: Secured rubbish bins positioned next to entrance gates and upstands at the base of the fence line (200mm min) to alleviate wind-blown rubbish, leaves, etc, onto the field through the fence.

- Drainage strategy: To reduce infill floatage with a severe rain event, consider the drainage strategy sufficient to cope with an intensity level in excess of the norm (suggest 1 – 50 year). This will reduce the probability of water pooling. By asking for double the normal holes in the latex backing or use of a mesh backing this will increase the porosity of the carpet. This should be considered for organic infill significantly as it floats easier than some rubber options.
- Pavement / drainage strategy: Consider a vertical draining strategy sub-carpet with a flat surface and the drainage mechanics in the shape of the sub-base and pavement. The lack of on field gradient will ensure no lateral surface movement of the water as all the gradient is in the pavement and sub-base. So, the porosity of the carpet/infill and shockpad is critically important.

Maintenance Strategy Specific for the Field Of Play

It is critical that the owner of the field of play appreciates that there are differing long pile systems available on the market, some with greater infill or less, some with a single monofilament, and others with dual yarns, all needing a small change in the maintenance ways. It's important that the field owner receives a manual that is developed for their specific field system.

Too often, asset owners are provided with a generic maintenance specification and manual that has probably been used globally and is not specific to a site. In many manuals, even the standard design pictures show only a monofilament grass, yet the majority of educated asset owners do not purchase these systems for open parkland fields anymore, yet the maintenance manuals still show them. There is an acknowledgment that this standardised approach needs to change.

The expected site specifics should include the following:

- Carpet type, dual yarn system.
- Layout of site, especially goal area and type of goals used.
- Infill type.
- High wear areas, especially penalties, corner areas, gate access points, coaches boxes, etc.
- The change in maintenance practices as the carpet ages – as the needs will change.
- Intensity of usage and where each type of maintenance should be carried out.
- Roles and responsibilities: who will do what maintenance.
- Renovation strategy (e.g. infill top-ups etc).

Resource Availability

The alignment of resources, skills and experiences is crucial to successfully managing the maintenance function. Section 2 explores the options in more detail. The key principles need to be:

- The type of maintenance needed and the machinery/equipment needed, whether that is a plastic rake to add infill around the penalty area or machines needed for brushing and deep cleaning.
- The in-house skills and experience, or should it be contracted out to a third-party contractor.
- Time needs to be considered and programmed into the schedule of the field.
- Funding is critical for success within the annual budget. It should include routine maintenance (e.g., brushing), programmed maintenance (e.g., deep cleans), and end-of-season renovation (e.g., seam corrections and infill top-ups).

Monitoring and Reviews of Performance

Within the maintenance there needs to be regular monitoring and an annual review to ensure that the surface and surrounding areas are being well managed. Section 4 explains the detail and should include:

- Pre and post-match monitoring, including specifically after drills in a specific area that may need a top-up (e.g. penalty areas).
- Regular maintenance (e.g. brushing) and a record kept of what's been done.
- Annual or post-season review before the renovation to prepare the field for the next 12 months and include any changes needed to ensure it reaches its age expectations.

Photo 5: Thomson park, Willoughby City Council using different grass types which meets the community needs and will need different maintenance approaches for long and short pile

2. Maintenance For Long Turf

2.1 Purpose of Maintaining Long-Pile (3G) Fields

Maintenance can be scheduled into a seasonal or annual program linked to usage, with regular maintenance (suggest one hour) linked to every 10 hours of play. It is recommended by some commercial operators[1] to have two to three hours of maintenance weekly for every 30 hours of use for long (3G) grass usage. Although FIFA suggest weekly[2], our view is that it needs to be linked to:

- The level of use per week;
- The type of usage (e.g. adult, junior);
- Intensity of the area used (e.g. 5-a-side needs more than 11-a-side);
- Available budget and resources, and
- The type of sports activity (e.g. Rugby scrums will impact surface displacement).

2.2 Initial Maintenance and Settling in Period

After the installer/builder hands over the field, the infill needs approximately 150 hours of play to 'settle the system in'. This normally allows the infill to be firmed up and reduced in height as it receives a gentle compaction with the initial usage. Many clients invite the local school children to play on it for a few days to get their feet running over it.

This may mean that the fields' initial look may look a little overfilled on handover, but with the initial usage, this should settle down accordingly. The independent Test Institute shouldn't come and test until after this 'settling in period' to ensure the test results are more accurate.

A handover meeting on the field attended by all stakeholders is critical. It allows for a Q&A session, a maintenance demonstration, and a consensus agreement on who will be responsible for what.

2.3 Routine Maintenance

2.3.1 Guidelines on frequency

Whatever the circumstances, a regular monitoring inspection will identify the routine needed for each specific field. Table 1 provides some guidelines. When developing a maintenance specification many of these tasks can be rolled into one visit, thus saving on the costs of addressing them individually.

Table 1: Guidelines for Maintenance

Suggested Routine Tasks	Playing Hours Per Week		
	<20hrs	20-40hrs	≥40hrs
Pitch inspection monitoring	Daily	Daily	Daily
Litter removal	Daily	Daily	Daily
Refilling high-wear areas	Weekly	Weekly	2 times a week**
Drag brushing heavily used areas - monofilament	Monthly	Fortnightly	Weekly
Drag brushing heavily used areas – dual yarn	Monthly	Monthly	3-4 weeks
Rotating Brush – high-wear areas	Quarterly	Monthly	Weekly to Fortnightly
Osculating Brush – high wear areas	Quarterly	Monthly or as needed	Monthly or as needed
Rotating Brush – whole pitch	Six monthly	Quarterly	Monthly or as needed
Weed/moss/algae treatment	Annually	Annually	Annually
Seams inspection	2 weeks	2 weeks	2 weeks
Surface de-compaction	Seasonally	Seasonally	Quarterly or 6 monthly***
Renovations (e.g. Infill top-ups, seam movement, flag holder changes, remarking of lines)	Seasonally	Seasonally	Seasonally

*** we would strongly recommend that after heavy use, e.g. training or end of matches the high-wear areas are topped up and brushed in.*

**** if dual yarn carpet*

2.3.2 Daily maintenance and monitoring checks

Prevention is the best science for prolonging the life of a field. This starts each day when someone should walk the field of play to ensure that it is safe for the next user and identify any simple maintenance rectifications needed (e.g., penalty spot top-up).

[1] Long Pile Synthetic Sporting Surfaces Maintenance Manual (2014) - Grassports

[2] FIFA Maintenance Guide (FIFA Maintenance Portal – sourced Nov 2014)

Either ground staff or a club representative should walk the field and maintain the surface, including:

- Removing any sharp objects from the surface, e.g. glass, syringes, metal, plastics, etc.
- Remove large pieces of organic matter, e.g. twigs, spoil by the gates, etc.
- Top-up areas around the penalty area, corner flags, line out areas with performance infill and sand
- Check the equipment – such as the goalposts, nets, and interchange boxes ensuring that equipment is safe and not damaged

When applying 'top-up' infill, it is suggested that the applicator should use a medium stiff brush or general plastic leaf rake to agitate the yarn before sowing the infill into the carpet, then rake over and then sow again in the evening in the depleted area. Gently do this enough times until the infill stands slightly proud of the rest of the infill around it. Then, walk across it a few times to softly compact it until it is at the same level as its surrounding infill. Lastly, the soft brush is applied to bring the fibres upright again.

2.3.3 Groom the surface

Regular brushing is an important function that must not be overlooked or neglected. Brushing helps to maintain uniform infill levels, keep the grass fibres upright, remove debris, and improve the field appearance.

Photo 6: Brushes towed behind a small tractor machine is better than a drag mat

Conversely, the flattening of grass fibres will increase the pace of the surface; consequently, the field no longer plays like a natural turf field, increases the risk of carpet burns when players slide on flattened piles and can create a possible acceleration of wearing of the playing surface, thus shortening its life.

Use only synthetic fibre bristles of recommended stiffness. Do not use metal or wire bristles. Ensure the bristles are set to the correct depth so they do not:

- Snag the pile tufts and pull them out of the carpet backing;
- Tear the backing of the synthetic turf carpet; and
- Pull the stabilising sand layer from the bottom of the infill to the surface.

The brushes can be mounted to a specialist plant or behind a general tractor (or mini-tractor) unit. To avoid the risk of contaminating the playing surface, the tractor should only be used on synthetic turf surfaces. The use of six-wheel vehicles is not recommended.

Do not use maintenance equipment before receiving proper use and safety training. Use equipment and vehicles that are approved by the field builder.

Frequency: Ask your manufacturer for the recommended grooming frequency. In general, the frequency will be related to the intensity of use; however, excessive brushing can damage fibres, which will compromise the field's performance characteristics and longevity over time.

Method: An average all-purpose vehicle that brushes a standard sized football field will take about two hours. The vehicle speed should be slow, and sharp turns must be avoided.

Direction of Brushing: The surface should be brushed in several directions, alternating the direction for each maintenance programme, but generally in the direction of the individual panels to avoid crossing over the main seams. On different days, start at different locations so as to alternate the brushing direction for each panel.

Photo 7: Modern machine providing height options for the tines to be used into the turf by an experienced operator

Brush Height Setting: The optimum brush height setting will depend on the model and type of equipment and what the aim of using tines is. It is important to engage professionals to assist with these deep cleans so that there is no damage to the turf and the seams.

Time: It will typically take around two hours to thoroughly walk, check the field, and then groom a full-size football/rugby field.

Alternative to brushing

The logic with dual yarn systems is that after the fibrulated tape encaptures the performance infill then they will not need the same amount of brushing due to the lack of infill migration seen on monofilament systems.

In addition, some experts are questioning the use of stiff brushes to only brush away debris on top of the surface, as the thinking is that the brushes will only fibrulate the yarn further.

An alternative system could be the use of a soft drag mat, such as the 'Turf Chief' by FSI.

Photo 8: FSI Field Chief drag and catch mat

2.4 Ageing Surface

As the Football Turf ages the users will probably notice more:

- Seams starting to spilt, especially if infill levels are not kept high;
- Compaction, especially on high wear areas and need to decompact
- Fibrillation of the yarn: the greater the fence height and the lower the infill, the more you will see.
- Need for greater infill top-up across the whole field

If a dual-yarn system is used, the need for continual brushing (fortnightly) should be reduced. This could mean moving from fortnightly to monthly.

As the field ages the type of and frequency of maintenance will change. This may include:

- Initial installation
  When the field is first installed the infill may feel spongy and the infill sitting on top of the yarn. The easiest way of resolving this is to start playing on the field immediately. By embracing an intensity of usage immediately it will compact the infill and 'settle it down'. The infill should be installed to the highest level possible, letting it settle (through usage) will be beneficial and may need "topping up" within 1-3 months.

- Initial 6 months
  The dual yarn system needs approximately 6 months for the tape yarn to fibrulate and capture the performance infill. So the maintenance should by every 2 weeks during this time to ensure that the migration of infill is 'brushed back' to the right levels. Post this period the brushing should be reduced to approximately monthly.

- Initial 12 months
  The first 12 months should be covered as part of the initial years Defects Liability Period. There should be a 12 month assessment and handover plan at the end of this which should ensure that the infill levels are back to their 'max' levels.

- Years 2 & 3
  With the new fields the maintenance should be settled down and regular maintenance planned, light and easy and monthly should be fine, if the daily/weekly is conducted re top-ups for penalty spots etc.

- Years 4 & 5
  As the 3G field progresses to its middle-age, it would be beneficial to conduct a post season assessment to identify any remedial works due. The annual maintenance should now be pre-planned around proactive work and remediation for the reactive works being identified through the reactive work.

2.5 Scheduled Maintenance

Over the life of the synthetic turf system, the system will need further scheduled maintenance and remediation. The 'tell-tale signs' of this may include the following points and may be noticed more frequently in the regular monitoring inspections:

- Yarn becoming significantly bent, flattened and not standing upright;
- Playing surface becoming hardened and more compacted;
- Dirt and debris accumulating within the infill and between the yarn despite the routine maintenance being performed;
- Seams are becoming loose, and
- Infill levels are becoming more uneven and stay in this position for a longer period.

Photo 9: Vandalism can entail a whole section being cut out and replaced

Photo 10: The yarn has been exposed to UV and the tips are breaking down and covering the maintenance machine

These are signs that specialist work needs to be performed and may include:

- Professional field inspections – development of a corrective action plan that identifies the effect and the cause, with strategies to address the problems;
- Decompaction of infill – using specialised equipment (e.g. SMG SportChamp) designed to decompact the infill, which will assist with the playing performance of the system with the ball and the player's boots;
- Major rejuvenation – measuring the infill depth against the supplier's recommendations and then redistributing or 'topping-up' in key areas;
- Deep cleaning – using specialist equipment to brush and vacuum the contaminants from the infill and
- Removal and reinstallation—If the field has become significantly impacted, specialist machines can remove key amounts of infill, clean it, and then replace it by removing embedded contaminants and decompacting the system, thus improving performance and drainage.

Metal Removal

Use a magnet attached to the maintenance equipment to remove ferrous metal objects from the field.

Photo 11: Machinery, including the metal magnet at rear (Source: Sports Clean)

2.6 Replacement of Higher Wear Areas

High wear areas (penalty spots and corner markings) are likely to wear more rapidly than the surrounding field, especially if infill levels are not regularly topped up. If left unattended, these areas will eventually tear and become a safety hazard to players.

Localised patching can be conducted when these areas show signs of significant wear. To reduce the rate of wear, consider using a strong tuff lock carpet. Over time, the yarn height may reduce, so an appropriate-sized matched piece should be used. To minimise colour differences, it is suggested that samples of carpet for patching be obtained when the field is initially laid.

Photo 12: Replacement penalty spot due to excessive wear

2.7 Static Electricity

In hot dry conditions, static electricity can cause the infill to stick to the pile yarns and increase infill migration. Surfactants like liquid laundry fabric softeners can be applied to the surface to reduce static electricity.

2.8 Microplastics

Microplastics (infill migration and now fibre wear) are receiving increasing media and political attention in Europe. Much of this is due to poor maintenance practices when moving snow, but equally, migration through the dispersion of clothing, flooding, etc., is a cause.

In Australia, we have seen several strategies being recommended to reduce the breakdown of the fibre and loss of the infill, including:

- Grates and carpets at the entry and exit points around the field of play to reduce the level of infill leaving the field;
- Use of barriers (normally 200m high) around field of play;
- Basket strainers pre the stormwater exits to capture any movement;
- Using soft drag mats as on older fields, the UV component mix is not as high, and the tips of the yarn have been slowly damaged and broken with the heavy rubber ones, and

- Increased UV testing for the yarn in Australia

2.9 Maintenance Log

The Field Supplier should provide the Maintenance Log and is normally linked to the field's Warranty. This means that completion of this Logbook is critical not only when you first receive the field but for every day, week, and month until the field is replaced. It is also a condition of the FIFA certification program, and it is good practice to show that the field is being maintained.

Typically, a logbook records the following information, and a more sophisticated form can be seen below.

Synthetic turf field maintenance log				
Usage			Maintenance	
Date	Hours of play	No. of players	Maintenance activity	Operator
12/6/13	4	22	Field inspection, localised infill top up	GW
13/6/13	6	3 x 16		
14/6/14	7	3 x 16	Field inspection, localised infill top up & grooming and drag mat	FS
15/6/14	5	22		
16/6/14	4	3 x 16	Field inspection, localised infill top up	GW
17/6/14	7	2 x 16		
18/6/14	6	3 x 16	Field inspection, localised infill top up & grooming and drag mat	GW

Figure 1: Typical logbook record

2.10 Annual Review

To conduct an annual review of the field, walk the field approximately every 3-5m apart and with a dozen passes, key issues should be identified.

Smart Connection Consulting normally walks by sliding our shoes along, enabling the feel of anything underfoot. Work shoes are better than trainers.

What items to look for:

- Flattened grass in high-wear areas;
- Seam joins parting and in need of regluing together;
- Trip hazards around penalty spots, corner flags or areas where a high build-up of infill has been displaced from the middle of the field;
- Compaction of infill;
- Additional wear areas, such as goal lines, white lines, goal box, etc.;
- Any defibrillation of yarn fibres in high-wear areas such as goal mouths, line referees on the side of the field etc.; and
- Displacement of infill from high-wear areas.

Key issues can be identified and compared annually by taking a scaled drawing during the field walk.

The drawing will also act as evidence to develop a strategy for any repairs or increased maintenance regime.

Smart Connection Consulting can complete these on behalf of clients and ensure that the field can have the best chance of achieving its life expectancy.

2.11 Impact of System on Maintenance

Adopting the suggestions within this Guide should impact the frequency of maintenance throughout the year and life expectancy. This should be reflected in the specification used to procure a price and quote and the maintenance manual provided by the manufacturer and installer.

To summarise, the following should be considered

Routine Maintenance	Rubber Infill		Organic Infill	
1st Year	Monofilament	Mono/Tape Dual Yarn	Monofilament	Mono/Tape Dual Yarn
Brushing – cleaning/litter removal	Weekly	Fortnightly after tape 'opens up'	Weekly	Fortnightly after tape 'opens up'
Grooming / Drag brushing to return infill	2 weeks	4 weeks	2 weeks	4 weeks
Clean up outside of fence/microplastics	2 weeks	4 weeks	2 weeks	4 weeks
High wear area decompaction	3 months	6 months	3 months	6 months
Weed/moss/algae treatment	Annually	Annually	Annually	Annually
Infill top-up	High-level end of season	Low-level end of season	Very high-level end of season	High-level end of season
Years 2-5				
Brushing – cleaning/litter removal	2 weeks	4 weeks	2 weeks	4 weeks
Grooming / Drag brushing to return infill	4 weeks	6 weeks	4 weeks	6 weeks
Clean up outside of fence / microplastics	2 weeks	4-6 weeks	2 weeks	4-6 weeks
High wear area decompaction	3 months	6 months	3 months	6 months
Weed/moss/algae treatment	Annually	Annually	Annually	Annually
Infill top-up	Very high-level end of season	Low-level end of season	Very high-level end of season	High-level end of season

Routine Maintenance	Rubber Infill		Organic Infill	
1st Year	Monofilament	Mono/Tape Dual Yarn	Monofilament	Mono/Tape Dual Yarn
Years 5 - 10				
Brushing – cleaning/litter removal	2 weeks	4 weeks	2 weeks	4 weeks
Grooming / Drag brushing to return infill	4 weeks	6 weeks	4 weeks	6 weeks
Clean up outside of fence/microplastics	2 weeks	4 weeks	2 weeks	4 weeks
High wear area decompaction	3 months	6 months	3 months	6 months
Weed/moss/algae treatment	Annually	Annually	Annually	Annually
Infill top-up	Very high-level end of season	Low-level end of season	Very high-level end of season	High-level end of season

Table 2: Maintenance requirements

Photo 13: The level of maintenance should be linked to the intensity of usage. (Source: Acoustoscan)

3. Maintenance Of Hockey Turf

3.1 Introduction

As with other surfaces it is important that the surfaces being used for Hockey are safe, perform against expectations and achieve their life expectancy. The maintenance regime will ensure that this happens.

As there are a number of Hockey Surfaces, their maintenance will need to be aligned slightly differently. The maintenance should be linked to:

- The intensity of usage weekly – number of hours and number of people
- The type of usage – Training and/or competition, full or part field.
- Surface type – Water-based, sand dressed or sand filled.

Photo 14: Blue and pink hockey field

3.2 Initial Maintenance and Settling Period

Once installed the surface needs time to settle in, including;

- Sand-filled – although not many of these are seen any more, they should be brushed after 100 hours of usage and ensure that the sand has compacted enough so that it is not slippery or has a feel of movement under the field.
- Sand dressed fields – commonly known as 'hybrid Hockey Turf' it is important to play and use the fields to ensure the sand has worked its way through the yarn to perform its purpose as a ballast. There shouldn't be much sand on the top of the carpet once 'settle in'.
- Water-based fields are the easiest, with no infill. Once the cannons have been used for the first few times, this should be okay.

3.3 Routine Maintenance

The routine maintenance should include:

- Brushing (hybrid and sand-filled) and grooming to remove rubbish and dirt.
- Leaf blowing.
- Decompaction (sand-filled) and as field ages.
- Inspections for repairs.

3.4 Scheduled Maintenance

Annual and bi-annual cleaning should be considered including:

- Algae / weed spraying
- Deep clean (with water) to remove any impurities in the carpet by a specialist organisation.
- Seam repairs.

3.5 Replacement of High Wear Areas

This is not as common as long-pile grass, but areas around the 'd' should be monitored and replaced as needed.

It is probably better to use a piece of carpet or the run-off area of the field to align the colours more accurately. Then the 'off-field' area can have the newer grass, which may be a deeper colour than the original grass.

4. Maintenance of Hard or Acrylic Surfaces

4.1 Introduction

The use of acrylic surfaces is becoming more prevalent, with a move from asphalt courts, which are not appealing aesthetically, normally black, hold the heat, lack colour and excitement that colour brings.

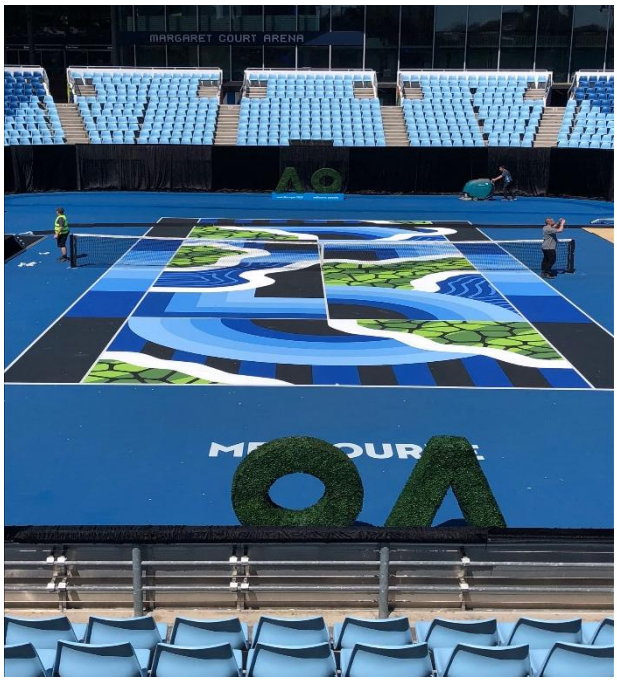


Photo: The sophistication of acrylic surface colouring means that surface cleaning needs to be programmed more often

Photo: Before and after, by Tennis Court Cleaning Sunshine Coast - Sunshine Coast Pressure Cleaning

The use of a broader, deeper pallet of colours has increased the use of acrylic surfaces. Th technology also means that they reflect the heat, the latest technology indicates heat temperature can be reduced by around 30-35%.

4.2 Initial Settling in Period

The surfaces can be used immediately and no settling in period is needed once the installer has handed the surface over.

4.3 Routine Maintenance

The surfaces should be kept clean to ensure safety, aesthetics and also if dirt builds up, the courts effectiveness to reduce heat temperature will be reduced.

Regular or routine maintenance should include:

- Leaf blower to keep the surface clean of leaves and detritus
- Annual clean with high pressure hose to clean the dirt off the surface. Most organisations will bring in a specialist company and machine to do this.
- Weed spray, especially around the fence line.

5. Maintenance of Rubber Athletics Tracks

5.1 Introduction

The cleaning of the athletics tracks addresses both the safety, performance and environmental issues around microplastic migration.

Photo 1 - Athletics track photo cleaning (SportsClean)

With the high wear areas the maintenance needs to consider the intensity of training, with use of key high wear areas such as High jump, Triple/Long jump, Javelin throw, 100m/200m sprint start areas etc.

5.2 Initial Settling in Period

The initial settling in period will focus on the 'loose rubber granules' that are part of the track performance system and should, if excessive, be swept up and with the manufacturer re-applied across the track. This is a rare challenge.

5.3 Routine Maintenance

Walking the track, spraying for weeds and moss in low use areas is important.

5.4 Scheduled Maintenance

An annual or bi-annual deep water clean of the track surface is recommended. Many of the white lines can capture dirt from usage and location and look as if they need replacement. A good clean will rectify this in the first few years.

Relying of lines after 5 years may be beneficial\

6. Monitoring of Surfaces

6.1 Introduction

There needs to be ongoing monitoring and review of the surface to ensure its performance is meeting standards, that its safe to use and that the surface is not ageing quickly. This should be built into the following routine:

- Pre-season and post-season monitoring
- Pre-game and post-game monitoring
- Aging review (4/5 years and 7/8 years)

6.2 Pre and Post-Season Monitoring

It is important that the playing surface is reviewed pre and post-season to explore:

- Any seam splitting on grass fields,
- Any cracking of surface on acrylic/hard surfaces,
- Any damage (e.g. spoke marks) on rubber tracks.

This should be conducted with enough time pre-season to ensure any renovations/repairs can be conducted prior to the start of the season.

Photo: Inspection around coaches box showing crushed drainage cell.

6.3 Pre and Post-Game Monitoring

The club should walk the surface prior to the game/weekend games starting to ensure the surface is safe and that there are no inhibitions to safe use of the surface.

Post-game or training is just as important, especially on long-pile surfaces and if routine skill practices have been used, then the key areas may be worn out form penalty spot usage, free kick drills, corner kicks etc. The majority of these can be rectified immediately post event.

6.4 Ageing Review Process

It is critical that the surface is reviewed regularly to ensure its safety, performance and overall ageing target. There is a need to bring in a specialist and independent organisation from your normal maintenance company.

7. Key Contacts

7.1 Independent Advisory Services

Smart Connection Consulting

Martin Sheppard, Managing Director

Suite 40, 204-218 Dryburgh Street

North Melbourne VIC 3051

p: (03) 9421 0133

e: martins@smartconnection.com.au

w: www.smartconnection.com.au

Consultant to all Football Codes in Australia

7.2 Key Sports

Football Australia (Football)

Level 22, Oxford Street

Darlinghurst NSW 2010

p: (02) 8020 4021

w: www.footballaustralia.com.au

National Rugby League Limited (NRL)

Luke Ellis, Participation, Pathways and Game Development

Rugby League Central, Driver Avenue

Moore Park NSW 2021

p: (02) 9359 8500

e: lellis@nrl.com.au

w: www.nrl.com

Rugby Australia (RA)

Michael Procajlo, General Manager Community Rugby

Rugby Australia Building

Cnr Moore Park Road and Driver Ave

Moore Park NSW 2021

p: (02) 8005 5555

e: Michael.Procajlo@rugby.com.au

w: www.rugbyaustralia.com.au

Australian Football League (AFL)

Amber Koster, Planning & Investment Lead

AFL House, 140 Harbour Esplanade

Docklands VIC 3008

p: (03) 8341 6085

e: Amber.Koster@afl.com.au

w: www.afl.com.au

American Football Australia

Wade Kelly, Chief Executive Officer

1/21 Waterloo Road

Collingwood, VIC, 3066

e: info@americanfootball.org.au

w: www.americanfootball.org.au

Touch Football Australia

Jamie O'Connor, Chief Executive Officer

6 Makin Place

Deakin ACT 2600

p: (02) 6212 2800

e: jamie.oconnor@touchfootball.com.au

w: www.touchfootball.com.au

Australian Oztag

Bill Harrigan, Chief Executive Officer

PO Box 703

Cronulla NSW 2230

p: (02) 9562 8633

e: info@oztag.com.au

w: www.oztag.com.au

7.3 Suppliers and Agents

ABS Sport Surfaces

3 Cochrane Street

Mitcham VIC 3132

p: (03) 9873 0101

e: daarons@berrysportsurfaces.com.au

w: www.abs-sportsurfaces.com.au

FieldTurf Australia

Warehouse C
2 Kookaburra Rd North
Prestons NSW 2170

e: info@fieldturf.com.au

w: www.fieldturf.com

- FIFA Preferred Producer
- World Rugby Preferred Provider
- AFL Approved Manufacturer

Grassports Australia

1/38 Green Street

Doveton VIC 3177

p: (03) 9792 0622

e: info@grassports.com.au

w: www.grassports.com.au

Grassports Australia and ABS Sports Surfaces are an agent for Polytan, who are:

- FIFA Preferred Producer
- World Rugby Preferred Provider
- AFL Approved Manufacturer

HG Sports Turf Australia

Suite 2, Level 1, 526 Whitehorse Road

Mitcham VIC 3132

p: (03) 9329 8154

e: info@hgsportsturf.com.au

w: www.hgsportsturf.com.au

They provide a range of Hybrid solutions for local government, sport and stadia

Polytan

Factory 3, Dunlopillo Drive

Dandenong South VIC 3175

p: (03) 8792 8000

e: enquiry@polytan.com.au

w: www.polytan.com.au

- FIFA Preferred Producer
- World Rugby Preferred Provider
- AFL Approved Manufacturer

Sports Clean

6/5 Hudson Avenue

Castle Hill NSW 2154

p: (02) 9420 1200

e: info@sportsclean.com.au

w: www.sportsclean.com.au

Synergy Turf Manufacturing

165 Prospect Highway

Seven Hills NSW 2147

p: 1300 796 100

e: help@synergyturf.com.au

w: www.synergyturf.com.au

Synergy Turf is the agent and Australian manufacturer for Greenfields, recognised as:

- FIFA Preferred Producer
- World Rugby Preferred Provider

TigerTurf Australia

15 Macquarie Drive

Thomastown VIC 3074

p: 1800 802 570

e: auinfo@tigerturf.com

w: www.tigerturf.com

TigerTurf is a FIFA Licensee

Tuff Group

58-60 Sunmore Close

Heatherton VIC 3202

p: 1800 887 326

e: enquiries@tuffturf.com.au

w: www.tuffturf.com.au

Tuff Turf is an agent for the Co-Creation Grass (CCG) products. CCG is:

- FIFA Preferred Producer
- World Rugby Preferred Provider

Turf One / Bild

Unit 12/89 Simcock Avenue

Spotswood VIC 3015

p: (03) 9719 1900

e: info@turfone.com.au

w: www.turfone.com.au

Turf One is an agent for the FieldTurf products. FieldTurf is a:

- FIFA Preferred Producer
- World Rugby Preferred Provider
- AFL Preferred Manufacturer

7.4 Independent Testing Institutes

Acousto-Scan

44/59-69 Halstead Street

South Hurstville NSW 2221

p: (02) 8385 4872

e: admin@acoustoscan.com.au

w: www.acoustoscan.com.au

Labosport Australasia

52 Raby Esplanade

Ormiston QLD 4160

p: (07) 3286 2237

e: keith.mcauliffe@labosport.com

w: www.labosport.com

7.5 Other Useful Contacts

Smart Connection Consulting

www.smartconnection.com.au

Global Peak Bodies for Synthetic Turf

Synthetic Turf Council (STC, USA)

www.syntheticturfcouncil.org

European Synthetic Turf Council (ETSC, Europe)

www.estc.info

Sports and Play Industry Association (SAPIA, AUS)

www.sapia.org.au

Sports and Play Contractors Association (SAPCA, UK)

http://www.sapca.org.uk/

International Association for Aquatics and Leisure Facilities (IAKS)

https://www.iaks.org/

International Sports Federations

Football/Soccer – FIFA - Quality Program for Football Turf

http://quality.fifa.com/en/About-the-programme/

Rugby Union – World Rugby - Rugby Turf Program

http://playerwelfare.worldrugby.org/rugbyturf

Smart Synthetic Sports Field Inspection and Maintenance Report

Field & Client Details:			
Name of field			
Address of field			
Client organisation			
Client contact		Contact Tel	
Date of visit		Time of visit	
Notes re field			
Contractor Details			
Contractor org. name			
Operators name		Operators Tel	
Inspection Details			
Outstanding issues			
Condition of field on arrival			
Details of maintenance carried out			
Key Findings (Write findings against each category)			
Surface		Contaminants / rubbish	
Infill		Penalty spot/ high wear areas	
Seams		Hazards	
Gates/fencing		Sports equipment	
Rectifications recommended			
1			
2			
3			
4			
5			
6			
Impacts if rectifications are not followed?			
Contractor signed		Client signed/dated	

Smart Connection Consulting

Smart Connection Consulting offers an innovative approach that delivers outcomes to enhance the experience of participation in physical activity, recreation and sport in local communities.

We specialise in the planning, development, management and procurement of synthetic sports surface technology. We see this technology as complementing natural grass and encouraging more people to be active, play and achieve success in sport because of its extended durability.

By embracing the skill sets and knowledge of our collaborative consultants, we can provide an integrated and holistic approach to our client's projects.

Smart Connection Consulting is the Technical Consultants for Rugby Australia, Football Federation Australia, and the National Rugby League and sits on the AFL technical committee.

> "Smart Connection Consulting has been an invaluable source of information for both the federation and our affiliated clubs. Martin specifically has responded to requests at short notice, provided valuable insights and produced quality pieces of work that haves allowed the football community to achieve deadlines and desired outcomes – we will certainly be using him again".
>
> *Football Victoria*

Field of Expertise

In collaboration with industry experts, we provide our clients with high-level quality service at an affordable price.

We work with synthetic and natural surfaces for the following sports facilities:

- Australian Rules Football Ovals
- Athletics Tracks
- Cricket Fields and Wickets
- Football (11-a-side, Futsal and 5-a-side)
- Hockey Fields
- Multi-sports Areas
- Rugby Union Fields
- Rugby League Fields
- Tennis Facilities

Commitment to Knowledge Building

We are committed to providing leading edge advice and knowledge so that the industry and our clients can appreciate how synthetic sports turf can complement their natural turf options.

We offer the industry and our clients advice, mentoring, and knowledge sharing so they can contextualise the opportunity and strategically consider options. Our approach provides rigor, and we use independent research as a base to ensure that the most appropriate options are determined.

These services include:

- Knowledge sharing master classes
- Planning and facility development workshops
- Business case workshops linked to Whole of Life Asset management costing strategies and income generation strategies
- Sports participation growth strategies linked to synthetic surfaces
- Synthetic field installation tours - Practical reality
- National Sports Convention

Feasibility and Funding Advice and Solutions

Completing a Business Case to justify the need for a synthetic surface can be streamlined by using our *Smart Whole of Life Costing Model*. We support clients in developing financial strategies and funding applications and, where applicable, offer funding packages with major financial institutes. Our offering includes:

- Financial strategy development to address WOL costings
- Funding applications for government grants
- Funding solutions with major lending institutes

We understand the use of supply modelling by using demographics of the local community, the needs and the opportunities for activating and retaining them in active recreation and sport which is paramount for a Feasibility Study or Business Case.

Our supply and demand modelling is critical in determining the needs for sports facilities, including:

- Supply and demand analysis
- Community consultation options

Master planning and Design Solutions

We will work with you to explore the site parameters and constraints, together with the opportunities, to ascertain the best design and management options for your park or venue.

Smart Connection Consulting has partners for all aspects of the project to provide the civil engineering aspect of each design and procurement project. Our collaboration can offer:

- Stakeholder consultation and technical approval
- Concept design options and strategy
- 3D design and fly-through options
- Geotech analysis and assessment
- Council presentations
- Cost estimate for concept design

We can mentor your team to understand how to best manage the facilities once built, as this is vital if the

funding is based on your organisation's ability to generate revenue.

We can support program development and provide advice on how to maximise the balance between club, school, commercial and your own programs, including:

- Program development strategies
- Price benchmarking
- Performance reviews

Procurement and Project Management Support

With over 20 years of experience in procurement and in collaboration with our engineers, we offer a full procurement service. These services include:

- Procurement strategy development
- EOI and RFT document development
- Design & Construct or Detailed Design options
- Tender evaluation facilitation
- Comprehensive tender evaluation tools to ensure a rigorous and transparent process to procure the best product that is fit for purpose and achieves the best value for the community

Collaborating with our partners, we provide detailed civil engineering hold points to ensure that every step of the installation meets the appropriate civil and performance standards, including:

- Site inspections and reports
- Witness and critical hold points
- Respond to construction RFI's
- Attend practical completion and defect inspections
- Site assessments and conditional audits

Our Clients

We have successfully completed a significant number of sports performance standards reviews, sports strategies, master plans, feasibility studies, business cases and procurement projects. Our client base includes:

- International Federations – FIH, FIFA & World Rugby
- National and State Sports Organisations – NRL, AFL, Hockey Australia, Football Australia, and State bodies
- Local Governments in Victoria, NSW, ACT, Qld, WA.
- Universities and Schools across the Country

Additional Organisations include – Mariners FC, Macarthur Football Association, Delfin Lend Lease, Veneto Club, Monash University, Southern Cross University, Queensland University of Technology and University of Queensland.

Smart Synthetic Sports Field Health Check

Review your field, understand risks and extend life expectancy

Australia's leading synthetic sports surface consultancy is offering the **Smart Synthetic Sports Field Health Check**, for clients who wish to find out what condition their synthetic fields are in and what is the probable life expectancy.

Smart Connection Consulting has been involved in over 70% of all the synthetic football fields (all codes) developed and installed in Australia in the past decade. We work closely with our clients to maximise the usage and life expectancy of their fields.

The Smart Synthetic Sports Field Health Check consists of:

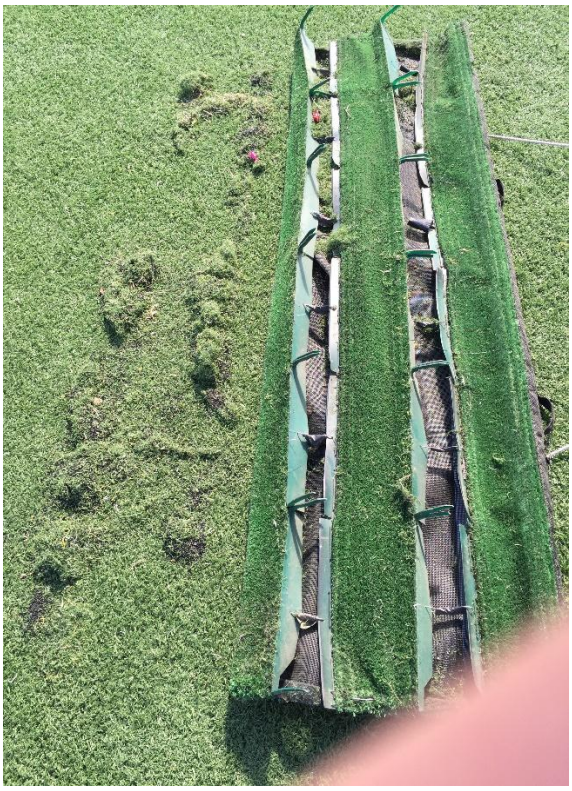
- Conducting a site analysis and field review to ascertain its current status;
- Assessing current maintenance practices to explore if this can extend the life of the field;
- Reporting on findings with improvement strategies;
- Risk assessment with mitigation strategies;
- Predicting life expectancy; and
- Replacement costings and modelling.

An Assessment Report is provided within 48 hours of the field assessment.

"The Smart Sports Field Health Check allowed us to appreciate the challenges we had, reduce our risks by adopting the risk mitigation strategies identified and we believe that we have extended the expected life by two years by adopting the recommendations for remediation and maintenance."

(Mick Roberts, Sports Grounds Manager, ACT Government)

Call (03) 9421 0133 and talk to Martin Sheppard or email martins@smartconnection.com.au to find out how the Smart Sports Field Health Check can extend the life of your synthetic sports field.



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36 Abernethy Road, Belmont
6104 Western Australia
Phone +61 (0) 874 444 673
www.tquip.com.au

ADE Turf Equipment Pty Ltd
17 Ashley Park Drive, Chelsea Heights VIC
3196 Australia
Phone +61 (0) 397 726 444
www.adeturf.com.au

www.smg-machines.com

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